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भारतीय मानक

मैगनिशियम इंगट – विशिष्टि

(दूसरा पुनरीक्षण)

Indian Standard

MAGNESIUM INGOTS — SPECIFICATION

(Second Revision)

ICS 77.120.20

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

July 1999

Price Group 2

Light Metals and Their Alloys Sectional Committee, MTD 7

FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Light Metals and Their Alloys Sectional Committee had been approved by the Metallurgical Engineering Division Council.

This standard was first published in 1972 and subsequently revised in 1981. In this revision following modifications have been made:

a) Grades have been redesignated on the basis of difference between 100 and sum total of the maximum content of the individual elements,

b) Requirements of three new grades Mg 9990, Mg 9995 and Mg 9998 have been included, and

c) Marking clause has been modified.

The chemical composition of various grades covered in ISO and Russian Standards are given in Annex A for information only.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2:1960 'Rules for rounding off numerical value (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

MAGNESIUM INGOTS — SPECIFICATION

(Second Revision)

1 SCOPE

This standard covers the requirements of magnesium ingots used for remelting purposes.

2 REFERENCES

The following Indian Standards contain provisions which through reference in this text, constitute provision of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

IS No.	*Title*
1387 : 1993	General requirements for the supply of metallurgical materials (*second revision*)
1817 : 1961	Methods of sampling non-ferrous metals for chemical analysis

3 MANUFACTURE

No scrap shall be used in the production of ingots except that which has been accumulated at the unit during the process of manufacture of ingots of similar grade.

4 FREEDOM FROM DEFECTS

The ingots shall have clean surface and shall be reasonably free from flux, slag and other foreign matter.

5 MASS, SHAPE AND SIZE

In general ingots are supplied having a mass of 8, 10 or 16 kg. The shape and size of the ingots shall be as agreed to between the purchaser and the manufacturer.

6 CHEMICAL COMPOSITION

6.1 The chemical composition of magnesium ingots shall meet the requirements given in Table 1.

6.2 The method of chemical analysis shall be as agreed to between the purchaser and the manufacturer.

7 CORROSION PREVENTION

In order to inhibit any possible corrosion during transport and storage, either chromate treatment or lanolin coating shall be given to the surface of ingots, as agreed to between the purchaser and the manufacturer.

8 SAMPLING FOR CHEMICAL ANALYSIS

8.1 At least one sample shall be selected for every 2 000 kg or part thereof of each melt which shall constitute a lot.

8.2 The sample for chemical analysis shall be obtained from the sample as per IS 1817.

8.2.1 The saw, drill, etc, used for taking the sample shall be thoroughly cleaned. The sawings or the millings shall be carefully treated with a magnet to remove any particles of iron introduced during sampling.

9 RETEST

If a sample selected for chemical analysis fails to meet the specified requirements, two further samples shall be taken from the same lot. If either of these samples fails to meet the specified requirements, the lot represented by the sample shall be rejected.

10 PACKING

Unless specified otherwise, the ingots shall be packed in such a manner as to prevent damage in ordinary handling and transportation. Each package or container shall contain ingots of one size only.

11 MARKING

11.1 Ingots shall be marked suitably with the following details:

a) Lot number,

b) Grade, and

c) Indication of the source of manufacture.

11.2 The material may also be marked with the Standard Mark.

11.2.1 The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act*, 1986 and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

Table 1 Chemical Composition of Magnesium Ingots

(*Clause* 6.1)

Sl No.	Grades	Maximum Permissible Impurities in ppm (1 000 ppm = 0.1 Percent)																	
		Al	Mn	Zn	Si	Cu	Fe	Ni	Pb	Sn	Ca	Cl	B	N	Cd	(Fe+Ni+Cu)	Na	Others (Total)	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
i)	Mg 9980	500	1 000	500	500	200	500	20	100	100	100	–	–	–	–	–	–	300	2 000
ii)	Mg 9990	100	400	200	100	50	400	10	50	50	50	50	–	–	–	–	20	200	1 000
iii)	Mg 9995	100	100	100	100	50	30	10	50	50	50	50	–	–	–	50	10	100	500
iv)	Mg 9998	40	20	50	30	5	20	5	50	50	30	30	–	10	–	20	10	–	200

ANNEX A

(*Foreword*)

COMPARATIVE INTERNATIONAL STANDARDS

A-1 ISO 8287:1984 (E)

Sl No.	Grades on the Basis of Mg, Percent	Maximum Permissible Impurities in ppm (1 000 ppm = 0.1 Percent)																	
		Al	Mn	Zn	Si	Cu	Fe	Ni	Pb	Sn	Ca	Cl	B	N	Cd	(Fe+Ni+Cu)	Na	Others (Total)	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
i)	9980	500	1 000	–	500	200	500	20	–	–	–	–	–	–	–	–	–	500	2 000
ii)	9995	100	100	100	100	50	30	10	50	50	–	–	–	–	–	50	–	100	500
iii)	9998	40	20	50	30	5	20	5	50	50	–	–	–	–	–	–	–	–	200

A-2 GOST 804-93

Sl No.	Grades on the Basis of Mg, Percent	Maximum Permissible Impurities in ppm (1 000 ppm = 0.1 Percent)																	
		Al	Mn	Zn	Si	Cu	Fe	Ni	Pb	Sn	Ca	Cl	B	N	Cd	(Fe+Ni+Cu)	Na	Others (Total)	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
i)	9980	500	500	–	500	200	500	20	–	–	–	50	–	–	–	–	–	500	2 000
ii)	9990	200	300	–	90	40	400	10	–	–	–	50	–	–	–	–	–	100	1 000
iii)	9995	100	100	100	40	30	40	10	50	50	–	50	–	–	–	50	40	100	500
iv)	9998	40	20	50	30	5	40	5	50	50	–	30	–	–	–	–	–	20	200

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This Indian Standard has been developed from Doc : No. MTD 7 (4119).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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Printed at : Prabhat Offset Press, New Delhi-2